



Stroke News

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NEXT BIG THING IN STROKE **PAGE 6** VASCULAR COGNITIVE IMPAIRMENT **PAGE 7** TIMING OF tPA **PAGE 13**

Thursday, February 18, 2016

Abstracts evaluate argatroban, endovascular treatment, VR

The efficacy of argatroban in supplementing the use of tPA in stroke patients, a meta-analysis of five recent trials of endovascular treatment, and the effectiveness of virtual reality as a rehabilitation therapy were among the abstracts examined during Wednesday's "Late-Breaking Science Oral Abstracts I."

ARTSS-2 RESULTS SUPPORT USE OF ARGATROBAN

The use of the anticoagulant argatroban with IV tPA offers clinical benefits and seems safe, warranting more study in a definitive efficacy trial.

Andrew Barreto, MD, is the lead author of the abstract "ARTSS-2: Final Results of a Pilot, Phase IIb, Randomized, Multicenter Trial of Argatroban in Combination With Recombinant Tissue Plasminogen Activator for Acute Stroke." He is an associate professor in the Department of Neurology at the University of Texas Health Science Center at Houston.

The trial's objective was to see if argatroban could be used with tPA in patients with large-artery strokes because tPA can fail to reperfuse in these patients when used alone, according to the abstract. In the trial, stroke patients receiving tPA were randomized to also receive high or low doses of argatroban or no argatroban to determine its safety and benefit.

Conducted between December 2011 and March 2015, the 90-patient trial was prematurely terminated because of the beneficial results. Patients who were treated with argatroban had higher rates of "excellent recovery" (31.2 percent combined) compared to tPA alone (20.7 percent), according to the abstract. Adjusted analyses demonstrated similar direction of benefit and a 79 percent posterior probability that combination therapy (low-dose plus high-dose) is superior to tPA alone.

META-ANALYSIS SUPPORTS ENDOVASCULAR TREATMENT ACROSS SUBGROUPS

Endovascular treatment is a highly effective therapy across all subgroups of patients suffering from stroke who were studied, according to a meta-analysis of five randomized trials whose results were released in early 2015.

The abstract, "Time Is Brain in Endovas-



On Wednesday, Andrew Barreto, MD, presented ARTSS-2 trial results that support the use of argatroban.

cular Thrombectomy: Results From Individual Patient Pooled Data Analysis of MR CLEAN, ESCAPE, EXTEND-IA, SWIFT PRIME and REVASCAT" focused on the analysis of individual patient data from the trials. The analysis was conducted by Highly Effective Reperfusion Evaluated in Multiple Endovascular Stroke Trials (HERMES) Collaborators, funded by an unrestricted grant to the University of Calgary, Canada.

All five trials supported endovascular thrombectomy as a definitive treatment for anterior circulation, large-vessel occlusive ischemic stroke, according to Wednesday's presentation. The pooled analyses of individual patient data allowed greater precision and the analysis of subgroups, according to presenters.

see **SCIENCE**, page 6

Research award will fund innovative investigators

The Henrietta B. and Frederick H. Bugher Foundation, one of the nation's leading funders of stroke research, announced Wednesday the creation of an award honoring a longtime trustee that will fund innovative investigators.

The inaugural prize went to James Weyhenmeyer, the vice president for research and economic development at Georgia State University.

Weyhenmeyer and Trustees will select a researcher who will receive a portion of the \$675,000 to fund a research project. The remaining funds will be awarded to other researchers over five years.



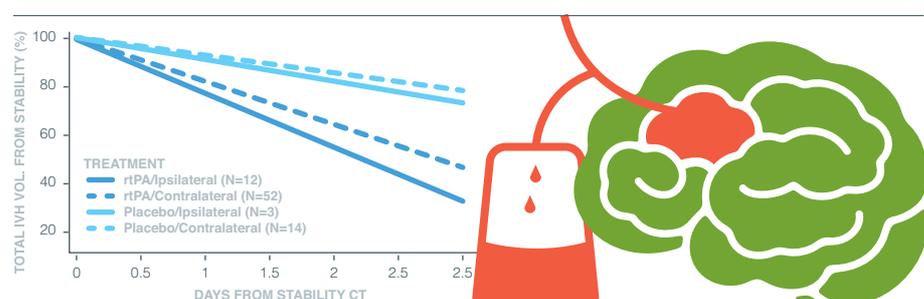
James Weyhenmeyer

The "Bugher-American Heart Association Dan Adams Thinking Outside The Box Award" was unveiled at the International Stroke Conference during a reception held in memory of Adams, a longtime Bugher Trustee who was instrumental in the foundation's support of stroke.

Weyhenmeyer is chairman of the Oversight Advisory Group for the American Stroke Association-Bugher Foundation Stroke Centers of Excellence, a \$9.65 million, four-year project that involves teams of researchers at UCLA, the University of Colorado at Denver and the University of Miami. The scientists are

see **OUTSIDE THE BOX**, page 13

TWO IS BETTER THAN ONE



CLEAR IVH phase II trials found that dual catheters were more efficient than a single catheter as a means of reducing the percentage of blood clot per day following intraventricular hemorrhage. Daniel Hanley, MD, and Issam Awad, MD, MSc, will address the role of catheters with back-to-back presentations when results from the CLEAR III trial are released during Plenary Session II at 10:30 a.m. today.

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AN EVENING
SYMPOSIUM:
THURSDAY
FEBRUARY 18
7:00 PM

JOIN US AND LEARN HOW WE CAN EVOLVE
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ACUTE ISCHEMIC STROKE – Evolving Solutions for the Changing Landscape of Care

Moderator: Andrew Demchuk, MD

Professor, Departments of Clinical Neurosciences and Radiology, University of Calgary,
Director, Calgary Stroke Program

The Cost Effectiveness of the Solitaire™ 2 Revascularization Device as an Adjunct to IV-tPA for Acute Ischemic Stroke

Jeffrey Saver, MD

Professor of Neurology, Geffen School of Medicine at UCLA,
Director, UCLA Comprehensive Stroke Center

Clinical Study Updates (STRATIS, New Study Announcement)

Jeffrey Saver, MD

Professor of Neurology, Geffen School of Medicine at UCLA,
Director, UCLA Comprehensive Stroke Center

Jan Gralla, MD

Director, Inselspital University Hospital Bern, Bern, Switzerland

Stroke System of Care – EMS/ED Perspective

Edward C. Jauch, MD MS

Professor, Director, Division of Emergency Medicine; Professor, Department of Neurosciences,
Vice Chair, Research, Department of Medicine; Professor, Department of Bioengineering (adjunct),
Clemson University

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LOCATION

JW Marriott Los Angeles L.A. LIVE – Platinum Salon
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This event is not part of the official International Stroke Conference 2016
as planned by the International Stroke Conference Program Committee.

This program is limited to licensed health care professionals only.

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SPOTLIGHT FEATURE: COLIN DERDEYN, MD

Neuroscience curiosity leads to great headway in stroke research

The science of the brain captured the interest of Stroke Council Chair Colin Derdeyn, MD, at a young age. That spark eventually led to Derdeyn's career in neuroendovascular radiology, where he has helped make significant inroads in clinical care and research advances.

"In the late 1980s, the first endovascular treatments for brain aneurysms and stroke were just being developed. There was a lot of excitement that we could do things that have a big impact to patients, so I moved toward training in those procedures," said Derdeyn, Krabbenhoft Professor and Chair of Radiology and professor of neurology and neurological surgery at the University of Iowa Hospitals and Clinics, and director for the Iowa Institute for Biomedical Imaging at the University of Iowa.

Derdeyn landed a research fellowship at Washington University in St. Louis in 1994. The university's stroke group engaged in groundbreaking work using PET scanners to measure brain blood flow and oxygen use in stroke patients. There he acquired expertise in the latest tools to

treat ischemic stroke and served as an investigator in clinical trials for cutting-edge innovations.

Over the years, Derdeyn has participated in research on measuring brain metabolism and developing better tools for selecting patients to undergo acute stroke treatment. Additionally, his leadership in large-scale clinical trials for interventional devices include SAMMPRIS (Stenting versus Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis) and COSS (Carotid Occlusion Surgery Study). Finally, he led the Washington University SPOTRIAS (Specialized Programs of Translational Research in Acute Stroke) Center. Two important projects at his SPOTRIAS site involved studies using MRI to visualize brain oxygen use and PET studies to examine various medications for improved blood flow in patients

with vasospasm after subarachnoid hemorrhage.

Not all of these trials yielded positive results. For example, in the SAMMPRIS trial, medical treatment with anticoagulant and antiplatelet drugs won out over angioplasty and stenting alone.

"The results of these trials are always important, even if they are not positive," he said. "We do find one answer from these trials, but our research also uncovers many other unanswered questions that require further investigation."

More than half of stroke patients do not experience a meaningful recovery, and many don't qualify for lifesaving treatment procedures, Derdeyn said. Additionally, many patients who have viable brain after stroke aren't receiving lifesaving treatments that could benefit them.

As for future interventional care, more devices remain to be developed that would im-



Colin Derdeyn, MD, has participated in research on measuring brain metabolism and developing better tools for selecting patients to undergo acute stroke treatment.

prove stroke treatment. Derdeyn is working on a mechanical device that may make tPA work much better than using magnetic fields outside of the head.

"We have made great headway on the endovascular treatment front for stroke," Derdeyn said. "At the same time, stroke care covers those three big areas—prevention, treatment and recovery. We are far from where we could be in all three." ■

QUESTION OF THE DAY

What are the barriers to telemedicine in stroke treatment?

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Daily Dose by Jonny Hawkins



"I'm worried about your breathing. How much exercise are you getting?"

The cost of the equipment and of care. Once you get past those two factors, you can see the value; it more than pays for itself with quality of care and actually increases the number of revenue streams for hospitals. You need to take a long term versus short term view. The huge cost of having to rehabilitate stroke patients after the fact is so much higher than treating them on the front end. The cost of not doing it now is so high.



Michael Woodcock
Atlanta, Georgia

The problem is getting the technology solution in everyone's hands. We need to have a dedicated and secure app for users.



Rodney Allan
Campredown, Australia

I knew about this 15 years ago, and I thought it was going to be the next big thing. And here we are. We know the need. Patients want it. But the stakeholders are not buying it.



Sunmoo Yoon
New York, New York

Connectivity across cities, counties and states. There needs to be more joint work with stakeholders. It won't be easy, but it is the right thing to do.



Manish Gupta
Irvine, California

Three things — No. 1: the infrastructure in the developed versus undeveloped countries. We have done a better job in the developed countries. No. 2: Ensuring that people are aware of the standard of care. Educating people that response time is the most important thing. No. 3: Improving the overall education about stroke and the risks of not treating immediately.

Getting the funding. The technology and networking are there. People would love to have it.



Virginia Howard
Birmingham, Alabama

Access to monitoring.



Maria Patrao
New York, New York



Manejeh Yaqub
San Jose, California

Stroke News

Thursday, Feb. 18, 2016

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Plenary highlights three late-breaking trial results

ate-breaking trial results on the use of pioglitazone to reduce the risk for subsequent cardiac events, enhanced and prolonged Holter monitoring for detecting AF, and carotid stenting versus endarterectomy were announced in a standing-room-only plenary session on Wednesday.

Reducing insulin resistance may be an effective strategy for reducing cardiac and cerebrovascular events, according to the results of the Insulin Resistance Intervention after Stroke (IRIS) Trial. The trial found that patients with a prior stroke or TIA who took pioglitazone had an absolute risk reduction of 2.9 percent and a relative risk reduction of 24 percent for a stroke or myocardial infarction compared to placebo.

“If you target insulin resistance, you may be able to reduce cardiovascular and cerebrovascular risk for future events,” said Walter N. Kernan, MD, professor of Medicine at Yale School of Medicine. “The probabilities of a subsequent event diverged early and increased over time.”

Researchers randomized 3,876 patients with an ischemic stroke or TIA in the prior six months to pioglitazone or placebo for five years. The primary endpoint was subsequent stroke or MI. Patients on pioglitazone had a 9.0 percent rate of stroke or MI versus 11.8 percent

for placebo ($p=0.007$). Pioglitazone patients also were 52 percent less likely to develop diabetes compared to placebo patients ($p<0.0001$).

A serious adverse event of concern in the pioglitazone group was an increase in bone fracture requiring hospitalization or surgery: 5.1 percent versus 3.2 percent ($p<0.01$). Non-serious AEs included weight gain, edema and dyspnea.

“For the first time, a therapy directed at insulin resistance has been shown to reduce the risk for cardiac and cerebrovascular events in non-diabetic patients with ischemic stroke or TIA,” Kernan said.

The IRIS Trial results are simultaneously being published in the *New England Journal of Medicine*.

REPEATED AF MONITORING

Atrial fibrillation is a known risk factor for recurrent ischemic stroke, but AF can be difficult to detect in acute stroke patients who present with a sinus rhythm. A multicenter study in Germany found that repeated 10-day Holter monitoring detects significantly more AF than standard care.

“Stroke patients have a high risk of underlying AF and should be anticoagulated if AF is detected,” said Rolf Wachter, MD, who presented the results of Finding Atrial Fibrillation in Stroke — Randomized Evaluation of Enhanced

see **PLENARY**, page 10



Walter N. Kernan, MD, reported that the Insulin Resistance Intervention after Stroke (IRIS) Trial found that patients with a prior stroke or TIA who took pioglitazone had an absolute risk reduction of 2.9 percent and a relative risk reduction of 24 percent for a stroke or myocardial infarction compared to placebo.

Studies look at familiar agents, find new uses in stroke treatment

Although inflammation and edema are key components in the pathogenesis of stroke, there are currently no pharmacologic treatments that adequately address them. Early-stage trials could point the way to new approaches with agents typically used to treat multiple sclerosis and diabetes.

The results will be presented during Plenary Session III, at 10:30 a.m. Friday in Hall K.

“One of the most interesting trials to be presented is ACTION,” said ISC Program Chair Kyra Becker, MD, professor of neurology and neurological surgery and co-director of the University of Washington Medicine Stroke Center in Seattle. “This study looks at the effects of natalizumab on infarct volume in acute ischemic stroke. Natalizumab is a monoclonal antibody that is used to block lymphocyte migration and reduce inflammation in the treatment of multiple sclerosis. The hope is that giving it early in stroke can prevent inflammation and improve outcomes.”

Jacob Elkins, MD, senior director of clinical development at Biogen Idec in Cambridge, Massachusetts, will present “Primary Results of the ACTION Trial of Natalizumab in Acute Ischemic Stroke (AIS)” during the session.

This phase II interventional trial is designed to determine if a single 300 mg dose of intravenous natalizumab reduces change in infarct volume from baseline to day five. The study cohort was divided into two arms, one treated within six hours of when they were last known normal and the other arm treated between six and nine hours of last known normal. The multicenter, randomized placebo-controlled study was expected to

enroll 160 patients. The trial was sponsored by Biogen, which manufactures natalizumab.

A second key presentation is GAMES-RP, the Glyburide Advantage in Malignant Edema and Stroke — Remedy Pharmaceuticals. The trial looked at the effect of intravenous glyburide, a

sulfonylurea most commonly used as an oral medication to reduce serum glucose levels in type 2 diabetes. As an IV formulation, glyburide also has a potent effect on the SUR-1 channel and helps prevent cerebral edema.

The primary results were presented earlier this year, Becker said, but the ISC presentations will focus on six-month outcome data as well as the effect of glyburide on edema and the potential of glyburide to reduce the need for more aggressive life-saving interventions. W. Taylor Kimberly, MD, PhD, associate director of the Neuroscience Intensive Care Unit at Massachusetts General Hospital, will discuss an intermediate endpoint analysis of GAMES-RP as proof of concept.

“This study is targeting the biggest and the baddest strokes we see,” Becker said. “These are the patients you know are headed for bad outcomes. It is promising to think about medical strategies that might attenuate edema and prevent some of those very worst-case scenarios that terminate in death.”

Lee H. Schwamm, MD, vice chair of neurology and director of TeleStroke and Acute Stroke Services at Massachusetts General Hospital and co-principal investigator of MR WITNESS, will present data showing that the use of intravenous tPA is safe and feasible in patients with stroke whose onset is unknown and whose MRIs show favorable characteristics. ■



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2017 International Stroke Conference award nominations

Submit your nominations for the ISC 2017 Feinberg, Sherman and Willis Awards.

• Nomination period opened:
Wednesday, Feb. 17, 2016

• Nomination period closes:
Wednesday, July 6, 2016

Go to strokeconference.org/awardsandlectures for more information.

SCIENCE

continued from page 1

Subgroups of interest were age, sex, occlusion location, ASPECTS score, treatment with alteplase and time from randomization.

The presentation concluded that the data could provide additional support for endovascular treatment in subgroups not examined in the individual trials and added that caution is still warranted in interpreting results for groups with small numbers.

VIRTUAL REALITY QUESTIONED

Virtual reality as an add-on therapy to conventional rehabilitation is not superior to intensive recreational therapy, according to the “Virtual Reality in Stroke Rehabilitation: Results From EVREST Multicenter Trial” study released Wednesday.

EVREST — Efficacy of Virtual Reality Exercises in Stroke Rehabilitation — was led by Gustavo Saposnik, MD, MSc, to examine limited evidence from small, single-center studies that suggested modest benefits for stroke patients, according to the presentation.

The study compared the efficacy of virtual reality with recreational therapy when they were added to customary care for motor recovery among patients who suffered ischemic strokes. Trial participants were between ages 18 and 85 whose ischemic stroke was confirmed by CT or MRI. Virtual reality participants played video games, while recreational activity participants matched cards or played dominoes, a ball game or Jenga.

The study concluded that virtual reality was not superior to intensive recreational therapy in improving motor function, grip strength, hand function, quality of movement or quality of life. ■

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SESSION SUMMARY

Leaders will explore ‘next big thing in stroke’

SESSION

Plenary Session III: The Next Big Thing in Stroke (at Lightning Speed)

10:30 am-12:30 pm, Friday, Feb. 19
Hall K

SPEAKERS

Thomas Willis Award Presentation

• **Ulrich Dirnagl, MD**, director of the Department of Experimental Neurology, chief executive director of the Center for Stroke Research, clinical program coordinator of the Excellence Cluster NeuroCure and the Berlin partner site of the German Center for Neurodegenerative Diseases at Charité Universitätsmedizin, Berlin

Late-Breaking Science Oral Abstracts

• **Helena Chang Chui, MD**, professor and chair of neurology at the University of Southern California Keck School of Medicine, Los Angeles

• **Bruce H. Dobkin, MD**, professor of neurology, director of the Neurological Rehabilitation and Research Program, and co-director of the Stroke Program at the University of California, Los Angeles

• **Stephan A. Mayer, MD**, professor of neurology and neurosurgery and founding director of the Institute for Critical Care Medicine at the Icahn School of Medicine at Mount Sinai, and director of neurocritical care for the Mount Sinai Health System, New York

ogy and neurosurgery and founding director of the Institute for Critical Care Medicine at the Icahn School of Medicine at Mount Sinai, and director of neurocritical care for the Mount Sinai Health System, New York

• **Jaroslav Aronowski, MD, PhD**, professor and vice chair for research in the Department of Neurology and the Roy M. and Phyllis Gough Huffington Chair in Neurology at the University of Texas Health Science Center at Houston

• **Robert G. Hart, MD**, professor of neurology and the Michael DeGroot Chair in Stroke Research at McMaster University and Hamilton Health Sciences, Hamilton, Ontario, Canada

SYNOPSIS

After Dr. Dirnagl presents “Why Translational Stroke Research Cannot Succeed Without Failure,” renowned thought leaders in stroke will offer their visions of the next big developments—in six minutes or less—during the Late-Breaking Science Oral Abstracts. They will explore what’s ahead in vascular cognitive impairment, stroke recovery (including results from the Effectiveness of Virtual Reality Exercises in STroke Rehabilitation trial), neurocritical care, stroke prevention, stroke imaging, epidemiology, genetics and palliative care.

cises in STroke Rehabilitation trial), neurocritical care, stroke prevention, stroke imaging, epidemiology, genetics and palliative care.

KEY TAKEAWAYS

While many sessions review and present data, this session is forward-thinking. Presenters discuss their thoughts on where the stroke field is headed. Formulating and presenting a new vision of the future in six minutes is a serious challenge, and there is no leeway. Moderators have stopped presenters in mid-sentence in past years.

QUOTABLE

ISC Program Chair Kyra J. Becker, MD:

“This is the one official session where imagination, not data, drives the discussion. Our presenters are clearly immersed in data, but what really sets them apart is their willingness to go out on a limb and predict, not just report.” ■



Kyra J. Becker, MD

Poster sessions, tours continue today

SC 2016 offers two types of poster sessions: Professor-Led Poster Tours and Regular Poster Sessions—one-on-one individual Q&A poster presentations.

Choose from 10 Professor-Led Poster Tours from 5:15 to 6:15 p.m. Thursday in Hall H. Expert moderators will lead these tours, which are organized by category. They provide a short presentation and Q&A with each of the poster authors in that section. To take part, simply review the Poster Abstracts section of the *Final Program* (page 48) or view the Moderated Poster Sessions on the Mobile Meeting Guide app. Decide which section/category of posters you would like to attend. Then, at 5:10 p.m., arrive at the correspondingly numbered “Section” sign for your selected section/category. Headsets will be available for ease of listening to the presenters.

During the Regular Poster Sessions, poster presenters will be at their posters for informal Q&As with attendees from 6:15 to 6:45 p.m. Thursday in Hall H. These one-on-one posters are not a part of the earlier Professor-Led Poster Tours. To see the posters featured in today’s Regular Poster Sessions, go to page 55 of the Poster Abstracts section of the *Final Program* or view the Poster Sessions on the Mobile Meeting Guide app.

Posters also will be available for viewing in the Poster Hall (Hall H) from 8 a.m. to 6:45 p.m. Thursday.

Please see page 47 of the *Final Program* for the Poster Hall map. ■



Regular Poster Sessions

6:15-6:45 p.m. | Posters TP1-TP463

These posters are not included in the 5:15 p.m. Professor-Led Poster Tour Session.

1. Acute Endovascular Treatment Posters II
2. Acute Neuroimaging Posters II
3. Acute Nonendovascular Treatment Posters II
4. Aneurysm Posters II
5. Basic and Preclinical Neuroscience of Stroke Recovery Posters II
6. Cerebral Large Artery Disease Posters II
7. Clinical Rehabilitation and Recovery Posters II
8. Community/Risk Factors Posters II
9. Diagnosis of Stroke Etiology Posters II
10. Emergency Care/Systems Posters II
11. Experimental Mechanisms and Models Posters II
12. Health Services, Quality Improvement, and Patient-Centered Outcomes Posters II
13. In-hospital Treatment Posters II
14. Intracerebral Hemorrhage Posters II
15. Nursing Posters II
16. Preventive Strategies Posters II
17. SAH and Other Neurocritical Management Posters II

18. Vascular Biology in Health and Disease Posters II
19. Vascular Cognitive Impairment Posters II
20. Ongoing Clinical Trials Posters II

Professor-Led Poster Tours

5:15-6:15 p.m. | Posters TMP1-TMP120

1. Acute Nonendovascular Treatment Moderated Poster Tour
2. Cerebral Large Artery Disease Moderated Poster Tour
3. Clinical Rehabilitation and Recovery Moderated Poster Tour
4. Diagnosis of Stroke Etiology Moderated Poster Tour
5. Experimental Mechanisms and Models Moderated Poster Tour
6. Health Services, Quality Improvement, and Patient-Centered Outcomes Moderated Poster Tour
7. Nursing Moderated Poster Tour
8. Preventive Strategies Moderated Poster Tour
9. SAH and Other Neurocritical Management Moderated Poster Tour
10. Vascular Cognitive Impairment Moderated Poster Tour



International Stroke Conference attendees ask questions and get answers from the panel at the VCI Mini-Symposium: Clinical Dilemmas in Vascular Cognitive Impairment on Wednesday.

Clinical interventions in vascular cognitive impairment

Can a clinical intervention protect patients against the cognitive impairment associated with stroke? Maybe, according to four researchers who spoke at the first session of Wednesday's VCI Mini-Symposium, "Clinical Dilemmas in Vascular Cognitive Impairment."

"There may be a rationale for the use of cholinesterase inhibitors for patients with vascular cognitive impairment," said Sandra E. Black, MA, MD, Brill Professor of Neurology at the University of Toronto and director of the Toronto Dementia Research Alliance. "There is evidence for modest cognitive benefits, but the evidence for global functional benefit is inconsistent."

The evidence for anticholinesterase agents is based on the hypothesis that stroke or other vascular injury give rise to a cholinergic deficit that impairs activities of daily living, behavior and cognition. The hypothesis is supported by preclinical and clinical data.

Trial data show modest improvement in cognitive impairments from the three cholinesterase inhibitors currently approved for other indications, but data for global functional improvement are mixed.

STROKE, DEMENTIA AND tPA

Another common clinical scenario is stroke in patients who have Alzheimer's. Early data suggested an increased risk of ischemic stroke following the use of tPA in dementia patients.

"We know that baseline dementia leads to worse outcomes after stroke, including patients receiving reperfusion therapy," said Maurizio Paciaroni, MD, neurologist with the Stroke Unit at Santa Maria della Misericordia Hospital University, Perugia, Italy. "We also know from multiple trials that age is no contraindication to thrombolysis."

Underlying dementia is a risk factor for intracerebral hemorrhage (RR=1.27) and disability at discharge (RR=1.22) following

thrombolysis, Paciaroni added. Patients with pre-existing dementia may benefit from thrombolysis, but their mobility, life expectancy, quality of life and social support must all be factored into the decision.

PREVENTING STROKE

Dementia is four to six times more prevalent in patients with a history of stroke, noted Oscar R. Benavente, MD, professor of neurology at the University of British Columbia in Vancouver, Canada. Patients with cognitive impairment pre-stroke are more likely to have worse outcomes.

The cognitive impairment from stroke appears to be associated in large part with leukoaraiosis, changes in the cerebral white matter often seen after stroke. Also noted is the focal thinning caused by the degeneration of connecting fibers caused by acute infarcts, including silent events.

"Stroke produces cognitive impairment, and it is likely that the reduction of stroke will impact post-stroke dementia," Benavente said. "All clinical trials for secondary stroke prevention should include cognitive impairment as an outcome."

TO MEASURE COGNITIVE IMPAIRMENT

Measuring cognitive impairment after a TIA or stroke is an enduring challenge. Multiple instruments have been developed, noted Ken Butcher, MD, PhD, associate professor of adult neurology and Heart and Stroke Foundation Professor in Stroke Research at the University of Alberta in Edmonton, Canada. The Montreal Cognitive Assessment (MoCA) appears to be more sensitive to cognitive impairment than other instruments.

One problem is that cognitive impairment is transient in many patients. He suggested completing a MoCA at discharge and again prior to returning to work or driving. Older patients and those with higher-volume leukoaraiosis are at higher risk for long-term cognitive impairment. ■

SESSION SUMMARY

Nutritional science may help improve care of stroke patients

SESSION

Nutrition to Prevent Further Brain Injury After Stroke

7-8:30 a.m., Thursday, Feb. 18
Room 502B

SPEAKERS

- **Hakan Sarikaya, MD**, Department of Neurology, University Hospital Bern, Switzerland
- **Jennifer L. Dearborn, MD, MPH**, assistant professor of neurology, Yale School of Medicine, New Haven, Connecticut
- **J. David Spence, MD, MBA**, professor of neurology and clinical pharmacology, Robarts Research Institute, University of Western Ontario, London, Ontario, Canada
- **Suzanne E. Judd, PhD**, associate professor of biostatistics, assistant dean and professor for undergraduate education, University of Alabama at Birmingham School of Public Health, Birmingham, Alabama
- **Amytis Towfighi, MD**, associate professor of neurology, University of Southern California in Los Angeles, director of neurological services and innovation, Los Angeles County Department of Health Services, and associate chief medical officer and chair of the Neurology Department, Rancho Los Amigos

National Rehabilitation Center, Downey, California.

SYNOPSIS

Nutritional science has established the importance of diet for brain health. This session will address concepts in nutrition pertinent to the clinical care of stroke patients or people at risk for stroke. Well-informed speakers will discuss diet pattern, nutrients, obesity, strategies for behavioral change and research needs in this growth area of preventive neurology.

KEY TAKEAWAYS

- Nutritional science can inform better care of cerebrovascular disease patients or people at risk.
- Many core nutritional concepts have not been subject to rigorous testing among stroke patients.
- Potential for research in nutritional science to improve care after stroke is enormous.

QUOTABLE

Walter Kernan, MD, category chair and professor of medicine at Yale School of Medicine in New Haven, Connecticut: "The application of nutritional science to the care of patients with cerebrovascular disease could transform preventative practice. A research agenda will show us the way." ■

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Memorial Healthcare System's Neuroscience Institute is expanding and seeking multiple neurologists including general neurologists and those with fellowship training in stroke, movement disorder, neuro intensive care, neuro oncology or behavioral neurology. Candidates must be BE/BC in general neurology with fellowship training in the subspecialties mentioned. The ideal candidates will be able to develop and collaborate with a multidisciplinary team of neurologists, neurosurgeons, neuropsychologists and neuroradiologists to provide leading edge neurological care in each of the subspecialties referenced. Successful candidates will provide inpatient and outpatient clinical services to adult neurology patients in need of neurological diagnosis and treatment. These are full-time employed positions with the multispecialty Memorial Physician Group. The positions offer competitive benefits and compensation package that is commensurate with training and experience. Professional malpractice and medical liability are covered under sovereign immunity.

About Memorial Neuroscience Institute at Memorial Healthcare System

Memorial Neuroscience Institute uses advanced technology and innovative procedures to treat patients with neuro oncological, neurovascular, neuromuscular and neuroinflammatory problems. The institute offers a wide range of surgical services, including radiosurgery, pituitary surgery, cerebrovascular neurosurgery and spine surgery. Memorial Neuroscience Institute also offers minimally invasive procedures such as image-guided brain surgery, minimally invasive spine surgery and neurovascular interventions.

Memorial Healthcare System is one of the largest public healthcare systems in the United States. A national leader in quality care and patient satisfaction, Memorial has ranked 11 times since 2008 on nationally recognized lists of great places to work. Memorial is located in South Florida, a region with a high quality of life – including year-round summer weather, exciting multiculturalism and no state income tax – that attracts new residents from all over the country and around the world.



memorialphysician.com

mhsemp008

LET'S TRANSFORM THE STANDARD FOR STROKE CARE. TOGETHER.

TOGETHER, WE CAN SET THE
STANDARD FOR **MECHANICAL
THROMBECTOMY.**

RIGOROUSLY TESTED:

With more than 1,000 patients enrolled across 6 different studies, the Solitaire™ device is the most extensively researched mechanical thrombectomy device available.¹⁻⁶

FASTER FLOW RESTORATION:

The Solitaire™ device's Parametric™ Design provides revolutionary technology to optimize clot retrieval and restore flow.⁷

Solitaire™ Revascularization Device*



RETRIEVE. RESTORE.
IMPROVE CARE.

LET'S EVOLVE TOGETHER.

* Solitaire™ Revascularization Device and Solitaire™ device refers to Solitaire™ 2 Revascularization Device and Solitaire™ FR Revascularization Device.

The Solitaire™ 2 Revascularization Device is intended to restore blood flow by removing thrombus from a large intracranial vessel in patients experiencing ischemic stroke within 8 hours of symptom onset. Patients who are ineligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy are candidates for treatment.

CAUTION: Federal (USA) law restricts this device to sale, distribution and use by or on the order of a physician. Indications, contraindications, warnings and instructions for use can be found in the product labeling supplied with each device.

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¹ Saver JL, Jahan R, Levy EI, et al. Solitaire flow restoration device versus the Merci Retriever in patients with acute ischaemic stroke (SWIFT): a randomised, parallel-group, non-inferiority trial. *The Lancet*. 2012;380(9849):1241-1249.

² Pereira VM, Gralla J, Dávalos A, et al. Prospective, multicenter, single-arm study of mechanical thrombectomy using Solitaire Flow Restoration in acute ischemic stroke. *Stroke*. Oct 2013;44(10):2802-2807.

³ Campbell BC, Mitchell PJ, Kleinig TJ, et al. Endovascular therapy for ischemic stroke with perfusion-imaging selection. *N. Engl. J. Med.* Mar 12 2015;372(11):1009-1018.

⁴ Goyal M, Demchuk AM, Menon BK, et al. Randomized assessment of rapid endovascular treatment of ischemic stroke. *N. Engl. J. Med.* Mar 12 2015;372(11):1019-1030.

⁵ Saver JL, Goyal M, Bonafe A, et al. Stent-retriever thrombectomy after intravenous t-PA vs. t-PA alone in stroke. *N. Engl. J. Med.* Jun 11 2015;372(24):2285-2295.

⁶ Jovin TG, Chamorro A, Cobo E, et al. Thrombectomy within 8 hours after symptom onset in ischemic stroke. *N. Engl. J. Med.* Jun 11 2015;372(24):2296-2306.

⁷ Solitaire™ FR with the Intention for Thrombectomy (SWIFT) Study SWIFT IDE #G090082 FD2923.

⁸ Sanna T, Diener HC, Passman RS, et al. Cryptogenic stroke and underlying atrial fibrillation. *N Engl J Med.* June 26, 2014;370(26):2478-2486.

⁹ Wolf PA, Abbott RD, Kannel WB. Atrial fibrillation: a major contributor to stroke in the elderly. The Framingham Study. *Arch Intern Med.* September 1987;147(9):1561-1564.

¹⁰ Stroke Prevention in Atrial Fibrillation Study. Final results. *Circulation*. August 1991;84(2):527-539.



Reveal LINQ™ Insertable Cardiac Monitoring System



MONITOR. DETECT.
TREAT AF.

TOGETHER, WE CAN TRANSFORM
THE WAY **CRYPTOGENIC STROKE**
IS MANAGED.

MONITOR LONGER:

The median time to AF detection in cryptogenic stroke patients is 84 days.⁸

DETECT MORE:

The CRYSTAL-AF Study found that continuous monitoring with Reveal ICM detected 7 times more AF than standard monitoring.⁸

TREAT AF:

AF patients have 5 times the risk for an ischemic stroke.⁹
Treatment with oral anticoagulants decreases this risk 67%.¹⁰

RELY ON REVEAL LINQ ICM TO INFORM YOUR CLINICAL DECISIONS.

Brief Statement: REVEAL LINQ™ LNQ11 Insertable Cardiac Monitor and Patient Assistant

INDICATIONS: REVEAL LINQ™ LNQ11 Insertable Cardiac Monitor:

The Reveal LINQ Insertable Cardiac Monitor is an implantable patient-activated and automatically-activated monitoring system that records subcutaneous ECG and is indicated in the following cases: • patients with clinical syndromes or situations at increased risk of cardiac arrhythmias • patients who experience transient symptoms such as dizziness, palpitation, syncope, and chest pain, that may suggest a cardiac arrhythmia. This device has not been specifically tested for pediatric use.

Patient Assistant: The Patient Assistant is intended for unsupervised patient use away from a hospital or clinic. The Patient Assistant activates the data management feature in the Reveal Insertable Cardiac Monitor to initiate recording of cardiac event data in the implanted device memory.

CONTRAINDICATIONS: There are no known contraindications for the implant of the Reveal LINQ Insertable Cardiac Monitor. However, the patient's particular medical condition may dictate whether or not a subcutaneous, chronically implanted device can be tolerated.

WARNINGS/PRECAUTIONS: REVEAL LINQ™ LNQ11 Insertable

Cardiac Monitor: Patients with the Reveal LINQ Insertable Cardiac Monitor should avoid sources of diathermy, high sources of radiation, electrosurgical cautery, external defibrillation, lithotripsy, therapeutic ultrasound and radiofrequency ablation to avoid electrical reset of the device, and/or inappropriate sensing as described in the Medical procedure and EMI precautions manual. MRI scans should be performed only in a specified MR environment under specified conditions as described in the Reveal LINQ MRI Technical Manual.

Patient Assistant: Operation of the Patient Assistant near sources of electromagnetic interference, such as cellular phones, computer monitors, etc., may adversely affect the performance of this device.

POTENTIAL COMPLICATIONS: Potential complications include, but are not limited to, device rejection phenomena (including local tissue reaction), device migration, infection, and erosion through the skin. See the device manual for detailed information regarding the implant procedure, indications, contraindications, warnings, precautions, and potential complications/adverse events. For further information, please call Medtronic at 1-800-328-2518 and/or consult Medtronic's website at www.medtronic.com.

CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician.

DISCOVER HOW
WE CAN PARTNER
TO TRANSFORM
STROKE CARE AT
BOOTH 327.

Medtronic

Learn, relax and recharge in the Science & Technology Hall

The Science & Technology Hall at ISC 2016 bridges the gap between clinical and professional education with an array of equipment, services and networking opportunities.

The Science & Technology Hall will showcase more than 100 companies from 10 a.m. to 4 p.m. on Thursday. There will be Wi-Fi hotspots and a charging station in Booth 359.

Plan to stop by the American Heart Association/American Stroke Association's HeadQuarters, Booth 235, for information on Advocacy: You're the Cure, American Stroke Association, Cryptogenic Stroke, EmPOWERED To Serve, HeartCare Channel, Hospital Accreditation/Certification, Patient and Professional Education, professional membership, Get With The Guidelines, Target Stroke, Quality Research, Research, Scientific Publications and ShopHeart. ■



Visit the American Heart Association/American Stroke Association's HeadQuarters, Booth 235 in the Science & Technology Hall, for information about AHA/ASA initiatives.

LEARNING AVAILABLE IN THE SCIENCE & TECHNOLOGY HALL

AHA/ASA HEADQUARTERS BOOTH 235

Thursday, Feb. 18

Noon-1 p.m.

Stroke Journal Webinar: Stroke Recovery—Timing, Training and Biological Determinants
Steven R. Zeiler, MD, PhD

3-3:20 p.m.

How to Claim Your Credit for ISC
Michelle Bruns, MLA, Director, Professional Education

COLLABORATION STATION BOOTH 235

Science Subcommittees focus on targeted areas of content for AHA/ASA. Members from these committees plan programming, author AHA/ASA science manuscripts, lead networking events, serve as content experts for AHA/ASA and more. Learn more or join an AHA/ASA Science Subcommittee at HeadQuarters, Booth 235.

CASE THEATERS BOOTH 445

Here you will gain insight into the decision-making, technical aspects and management of common procedures. You also will learn about innovations and best practices for the day-to-day care of your patients. The Case Theaters feature two 15-minute presentations followed by 15 minutes for a panel discussion and question-and-answer session.

Thursday, Feb. 18

3-3:30 p.m.

Mechanical Thrombectomy for Acute Ischemic Stroke: What Do I Do When It's Not Just an M1 Occlusion?
Case presenter: Kevin Cockcroft, MD, MSc, Penn State Hershey Medical Center

SIMULATION ZONE BOOTH 159

This 3D simulator experience with Body Interact tests clinical knowledge, skills and critical thinking in case scenarios using a virtual patient.

EXPERT THEATER BOOTH 445

The Expert Theater targets educational programs as well as featured products and therapeutic treatments from industry supporters. Enjoy lunch provided by the American Heart Association.*

* Provided to attendees by AHA/ASA. These events are not part of the official International Stroke Conference as planned by the AHA Committee on International Stroke Programming.

Thursday, Feb. 18

12:10-12:40 p.m.

Cryptogenic Stroke and the Role of AF Monitoring
Sponsored by Medtronic

1-1:30 p.m.

Advancing Anticoagulation Care With the Availability of a Specific Reversal Agent
Sponsored by Boehringer Ingelheim

CAROTID STENTING NOT INFERIOR TO ENDARTERECTOMY

Results of the Asymptomatic Carotid Stenting versus Endarterectomy Trial (ACT 1) showed that stenting is not inferior to endarterectomy for the treatment of asymptomatic carotid stenosis. The primary endpoints were stroke, MI or death within 30 days, and ipsilateral stroke 31 days to one year following the procedure.

"Putting a stent in the carotid is not worse than endarterectomy," said Lawrence R. Wechsler, MD, professor of neurology and neurological surgery, University of Pittsburgh School of Medicine. "The curves are virtually identical at 30 days and at five years."

The trial was halted early due to slow enrollment, he added, and the results are based on the use of a single stent. Enrollment declined as the Food and Drug Administration approved stents for carotid use, and patients could receive stents without enrolling in a clinical trial.

Medical management for asymptomatic stenosis also has evolved to become more aggressive, he added. CREST 2 is currently comparing both stenting and endarterectomy to current medical therapy. ■

2016 ISC EXHIBITORS CONTINUED ON PAGE 12

A

ACRM American Congress of Rehabilitation Medicine 543

ACRM | American Congress of Rehabilitation Medicine is an organization of rehabilitation professionals dedicated to serving people with disabling conditions by supporting research that promotes health, independence, productivity and quality of life, and the needs of rehabilitation clinicians and people with disabilities.

Adako USA 540

Leading distributor of 3-D massage chairs.

Advanced Cooling Therapy 247

The Esophageal Cooling Device is a unique single-patient-use temperature modulation device that attaches to commercially available chiller machines accessible in most hospitals. The ECD is inserted into the esophagus as quickly as an orogastric tube. Patient temperature is regulated by the chiller machine's Foley or rectal temperature probe.

AHA/ASA HeadQuarters 235

Plan to stop by the American Heart Association/American Stroke Association's booth to get the latest information on AHA/ASA initiatives.

Allied Powers LLC 153

Our products employ the latest in TENS (Transcutaneous Electrical Nerve Stimulation) and EMS (Electrical Muscle Stimulation) technology. They are easy to use, compact and have a fully rechargeable lithium battery.

American Association of Neuroscience Nurses (AANN) 636

The American Association of Neuroscience Nurses (AANN) is committed to working for the highest standard of care for neuroscience patients by advancing the science and practice of neuroscience nursing. AANN accomplishes this through continuing education, information dissemination, standard setting and advocacy on behalf of neuroscience patients, families and nurses.

American Board of Neuroscience Nursing (ABNN) 634

The American Board of Neuroscience Nursing (ABNN) is the independent, nonprofit corporation established to design, implement and evaluate a certification program for professional nurses involved in the specialty practice of neuroscience nursing and its subspecialties. The CNRN and SCRN certification and recertification programs are overseen by ABNN.

Apex Innovations 213

Easily achieve/maintain accreditation and improve stroke outcomes with the new Hemispheres 2.0™, Stroke Competency Series. Engaging interactivity and amazing graphics facilitate learning. Supports current best practices and educational initiatives. Comprehensive with knowledge quizzes, CE credit and administrator reporting. Free NIHSS. Call and get ready to be impressed!

AtriCure Inc. 512

AtriCure's AtriClip® is a left atrial appendage occlusion device that is the most widely implanted for left atrial appendage management worldwide. AtriCure's Synergy Ablation System is approved by the FDA for the surgical treatment of persistent AF and longstanding persistent AF in patients undergoing open heart procedures simultaneously.

Avizia 542

Avizia is redefining health care by leading the telemedicine revolution with the only complete telehealth platform. Avizia offers everything needed to quickly and securely implement enterprise telehealth, including integrated telemedicine carts, peripherals devices and clinical workflow management software.

B

Baylor Scott & White Health 353

Baylor Scott & White Health includes 49 hospitals, 800 care sites, 38,000 employees and the Scott & White health plan. We are seeking a BE/BC Vascular Neurologist to join in Temple, Texas. Stop by our booth for more information or apply online to be considered.

Bioness Inc. 452

bioness.com

BioTelemetry Healthcare, Cardionet/Mednet 620

At BioTelemetry, we fuel the advancement of mobile health service by providing leading technology and services that help healthcare providers monitor and diagnose patients and clinical research subjects in a more efficient, accurate and cost-effective manner.

Blue Sky Neurology 229

Blue Sky Neurology is an innovative neurology private practice that provides the full spectrum of neurological services. BSN has physicians involved in all phases of neurological illness: acute neurological emergencies, neurological support for hospitalized patients, outpatient care for those with new or ongoing neurological conditions and tele-neurology services.

Boehringer Ingelheim 317

Boehringer Ingelheim Pharmaceuticals Inc., the U.S. subsidiary of Boehringer Ingelheim, with headquarters in Germany, operates globally with more than 44,000 employees. The company is committed to researching, developing, manufacturing and marketing novel products of high therapeutic value for human and veterinary medicine. Follow us on Twitter at @boehringerus.

Brain Aneurysm Foundation 641

Promoting early detection of brain aneurysms by providing knowledge and raising awareness of the signs, symptoms and risk factors of brain aneurysms. Work with the medical communities to provide support networks for patients and families, as well as to further research that will improve patient outcomes and save lives.

Bristol Myers Squibb/Pfizer 441

Pfizer and Bristol-Myers Squibb are partners in a worldwide collaboration. This global alliance combines both Bristol-Myers Squibb's and Pfizer's long-standing strengths in drug development and commercialization.

Bristol-Myers Squibb 443

Bristol-Myers Squibb is a global biopharmaceutical company whose mission is to discover, develop and deliver innovative medicines that help patients prevail over serious diseases.

Bryn Mawr Communication Practical Neurology 236

Readers increasingly turn to Practical Neurology® because they trust its straightforward clinical and practice-management advice. Pressed for time and faced with multiple information sources, readers favor Practical Neurology® magazine's unique editorial style that cuts to the heart of the issues with authoritative content and summary points.

BTE Technologies 119

BTE produces computerized systems for physical and occupational therapy, both neuro and orthopedic rehab. Featuring the ReGo for robotic neuro rehabilitation, other equipment includes the PrimusRS for task simulation and functional testing; the Eccentron for lower extremity eccentric strength training; and the Multi-Cervical Unit for cervical spine testing and rehab.

C

California Rehabilitation Institute 254

A partnership of Cedars-Sinai Medical Center, UCLA Health and Select Medical, California Rehabilitation Institute is a new 138-bed, all-private-room physical medicine and rehabilitation hospital in Los Angeles that provides advanced acute inpatient rehabilitation care to patients who have suffered a stroke, brain injury or spinal-cord injury.

Carle Physician Group 354

Carle Physician Group, a 400-plus physician multispecialty group in Illinois, is part of a non-profit integrated network of healthcare services that includes Carle Foundation Hospital, a 393-bed Magnet® Level I Trauma Center with Level III perinatal services and clinics located in 19 communities throughout Illinois.

Chiesi 307

Chiesi USA Inc. has headquarters in Cary, North Carolina, and is a specialty pharmaceutical company focused on commercializing products for the hospital and adjacent specialty markets. Chiesi USA Inc. is a wholly-owned subsidiary of Chiesi Farmaceutici S.p.A. For more information, visit our website or call our customer-service department at 888-466-6505.

Clinical Data Management 215

Clinical Data Management puts the right information into the hands of the right individuals at the right time. For more than 30 years, CDM has designed and supported nationally and internationally acclaimed medical data software systems. Collect, sort, analyze and interpret data in ways that are important to your organization.

ContextMedia Inc. 448

In today's medical practice, patient satisfaction is vital. ContextMedia Health's Waiting Room TV system and Exam Room tablets engage patients where and when they take action. Our award-winning media turns wait-time into an informative experience.

Corazon Inc. 330

Corazon Inc. is a national leader in neuroscience, cardiovascular and orthopedic program development through consulting, patient management software, recruitment and interim management services. Corazon's CEREBROS Stroke Patient and Data Management System is a unique tool to enhance stroke programs' ability to allow clinicians to truly focus on patient care.

D

Dart NeuroScience LLC 141

The Dart NeuroScience booth at the 2016 ISC is primarily to introduce DNS to conference members who conduct clinical research in order to identify and potentially recruit investigative study sites for DNS's clinical research programs in post-stroke patients. All DNS clinical research efforts currently involve only unapproved, investigational drugs.

DNV GL - Healthcare 407

DNV GL is a certification body. We help businesses assure the performance of their organizations, products, people, facilities and supply chains through certification, verification, assessment and training services. Within health care, we help our customers achieve excellence by improving quality and patient safety through hospital accreditation, management system certification and training.

UNOFFICIAL SATELLITE EVENT

These events are not part of the official International Stroke Conference as planned by the AHA Committee on International Stroke Programming.

Thursday, Feb. 18

Acute Ischemic Stroke: Evolving Solutions for the Changing Landscape of Care

7-10 p.m.

Industry-Supported Symposium

Supported and sponsored by Medtronic
JW Marriott Los Angeles L.A. LIVE

PLENARY

continued from page 4

and Prolonged Holter-ECG. Wachter is head senior physician at the Clinic for Cardiology and Pneumology at the University of Göttingen, Germany.

A total of 398 stroke patients in four centers were randomized to 10-day monitoring within seven days of the index stroke, then repeated at three and six months, or standard of care. At six months, 13.5 percent of the recurrent monitoring group showed evidence of AF versus 4.5 percent of the standard-of-care group (p=0.002).

When AF was newly diagnosed, patients were started on oral anticoagulation therapy in both arms. At 12 months, there were numerically fewer recurrent strokes in the recurrent monitoring group, but the difference was not statistically significant. Wachter noted that the trial was not powered to detect differences in rates of recurrent stroke, but suggested that recurrent monitoring be considered for all stroke patients in whom the detection of AF is of therapeutic relevance. ■

2016 ISC EXHIBITORS CONTINUED FROM PAGE 11

Portola Pharmaceuticals Inc. 606

portola.com
Portola Pharmaceuticals Inc. was founded in 2003 and has headquarters in San Francisco. Our goal is to build an enduring biopharmaceutical company with compounds from our own research efforts that represent significant advances in the fields of thrombosis and other hematologic diseases. Each of our therapies has the potential to address a significant unmet need. We are advancing our candidates (Betrixaban, Andexanet alfa and Cerdulatinib) using novel biomarker and genetic approaches.

PresenceLearning Inc. 137

presencelearning.com
PresenceLearning offers hospitals and stroke centers access to fully credentialed and qualified speech language pathologists to perform live, online dysphagia evaluations via telemedicine.

Pulsara 618

pulsara.com
Who says an acute care management solution has to be complicated? Pulsara is a platform that performs like an app, providing dense data and motivating benchmarks. The easy-to-adopt, HIPAA-compliant platform links up the entire emergency response team with a tap, eliminating unnecessary pagers, phone calls, operators, faxes and emails.

REACH Health Inc. 413

reachhealth.com
REACH Health's enterprise telemedicine software combines audio and video with patient data, clinical workflow and documentation to recreate the bedside experience for the doctor and patient. REACH Health pioneered one of the first telestroke programs and continues to lead innovation, providing advanced clinical solutions that improve patient access and outcomes.

RegionalCare Hospital Partners 355

RegionalCare provides high-quality, compassionate hospital and healthcare services to non-urban communities across the country. By developing regionally focused healthcare delivery systems, we are able to ensure that access to care is available to our patients and their families close to home. Our relationships with community hospitals are formed through partnerships that will accelerate the hospital's strategic vision and enhance its regional influence and reputation. We provide expertise to the management team and access to capital for the entire organization to grow services, quality, outreach and reputation. RegionalCare currently operates facilities in Alabama, Arizona, Connecticut, Iowa, Montana, Ohio and Texas.

Remedy Pharmaceuticals 629

remedypharmaceuticals.com
Remedy Pharmaceuticals Inc. is a privately held, clinical-stage pharmaceutical company focused on bringing life-saving treatment to millions of people affected by acute central nervous system conditions, including stroke as well as other ischemic injuries and neurological disorders, such as traumatic brain injury, subarachnoid hemorrhage and spinal cord injury.

Retreat & Refresh Stroke Camp 640

strokecamp.org
Retreat & Refresh Stroke Camp provides weekend retreats for stroke survivors, caregivers, family members and volunteers. In addition, Retreat & Refresh Stroke Camp conducts specialized stroke awareness events through major and minor league baseball called Strike Out Stroke.

Rimed Inc. 619

rimed.com
Rimed is a dynamic high-tech company with more than 30 years of innovation in advanced diagnostic medical equipment that develops, manufactures and exports transcranial doppler systems. These systems non-invasively measure blood flow velocity in the main arteries of the brain. Rimed exports its line of products to more than 40 countries.

RosmanSearch Inc. 113

rosmansearch.com
RosmanSearch Inc. is a targeted physician recruitment firm that serves the needs of the neuro-surgical and neurological communities. Our mission is to place quality physicians with quality practices, academic departments and hospitals nationwide.

Samsung neurologica 515

neurologica.com
NeuroLogica, a subsidiary of Samsung, brings the power of innovative imaging to your patients. With an expertise in CT design, NeuroLogica transforms fixed CT technologies into portable platforms used in many different clinical applications. One of the newest and most exciting applications has been in mobile stroke units.

Sanofi Genzyme 614

Sanofi Genzyme focuses on developing specialty treatments for debilitating diseases that are often difficult to diagnose and treat, providing hope to patients and their families.

Siemens Healthcare 107

usa.siemens.com/healthcare
Siemens Healthcare is one of the world's largest suppliers to the healthcare industry and the first full-service diagnostics company. The company is known for bringing together innovative medical technologies, healthcare information systems, management consulting and support services to help customers achieve tangible, sustainable, clinical and financial outcomes.

Simulation Zone 159

Body Interact™ product is a training skills platform based on virtual patients and designed with the aim of improving decision-making and patient safety in acute or chronic care settings with a clinical problem-solving approach. Attendees will receive virtual training using this high-tech, collaborative, case-based simulation platform. The cases presented will utilize guidelines and clinical evidence and will provide immediate feedback and debriefing.

Society of NeuroInterventional Surgery 358

snisonline.org
The Society of NeuroInterventional Surgery (SNIS) is a scientific and educational association dedicated to advancing the specialty of neurointerventional surgery through research, standard-setting, education and advocacy in order to provide the highest quality of patient care in diagnosing and treating diseases of the brain, spine, head and neck.

Specialists On Call 346

specialistsoncall.com
SOC is the nation's most experienced provider of physician telemedicine consultations, offering 24/7 coverage and serving more than 380 hospitals nationwide. Through its neurology, psychiatry and critical care services, SOC delivers board-certified, U.S.-trained specialty physicians directly to the patient's bedside.

Spectrum Health 642

spectrumhealth.org
Spectrum Health is a nonprofit health system based in west Michigan offering a full continuum of care through the Hospital Group, comprised of 11 hospitals, 169 ambulatory/service sites, 1,150 employed physicians and advanced practice providers, including Spectrum Health Medical Group members, and Priority Health, a 590,000-member health plan.

St. John Health System 637

stjohnhealthsystem.com
The St. John Heyman Stroke Center, a Joint Commission-certified comprehensive stroke center in Oklahoma, is recognized by the American Heart Association and American Stroke Association Get With The Guidelines - Stroke program as northeastern Oklahoma's only Gold Plus performance award recipient for stroke care for the third consecutive year.

Stroke Association of Southern California 261

strokesocal.org

Stryker and Frazer 419

strykerneurovascular.com
Stryker Neurovascular is committed to Complete Stroke Care™ through innovative products, technologies and services for ischemic and hemorrhagic stroke. By advancing the practice of less-invasive medicine, providing healthcare professionals more endovascular solutions and promoting clinical education and support, Stryker Neurovascular is dedicated to helping deliver better patient outcomes.

Stryker Neurovascular 2 147

Stryker, a world leader in medical technology, and Frazer, a recognized innovator in mobile health care, have come together to develop a complete mobile stroke program. Through this program, we're committed to helping you assemble a customized end-to-end mobile stroke solution to meet your organization's needs.

TARDIS, TICH-2 and RIGHT-2 Trials 314

The University of Nottingham Stroke Trials Team run the phase III TARDIS (Triple Antiplatelets for Reducing Dependency after Ischaemic Stroke) TICH-2 (Tranexamic Acid for IntraCerebral Haemorrhage) and RIGHT-2 (Rapid Intervention with Glyceryl trinitrate in Hypertensive stroke Trial) trials in the U.K. and internationally.

Telespecialists 311

TeleSpecialists provides a comprehensive consultation service that allows your facility to initiate a telemedicine program from the ground up. TeleSpecialists will work with your organization to develop a blueprint for a first-rate telemedicine program and provide access to experienced, high-quality specialists for your patients.

Tenet South Florida Advanced Neuroscience Network 519

TFPSdocs.com
Tenet Florida's Advanced Neuroscience Network includes more than 40 physicians and 10 award-winning hospitals and outpatient centers across Miami, Fort Lauderdale and Palm Beach. Our team provides comprehensive neurological and ancillary services from leading neurologists in south Florida. We are seeking neurologists interested in stroke and neurohospitalist opportunities.

Twiage 348

twiaged.com
Twiage is a comprehensive, pre-hospital notification platform that delivers real-time data from ambulances directly to hospitals with GPS-powered ETA. Powered by a proprietary decision-support algorithm, paramedics and EMTs can use Twiage's HIPAA-compliant smartphone app to capture critical symptoms and demographics in photos, videos and voice memos.

UMiami Gordon Center for Research in Medical Ed. 635

gcrme.miami.edu
The University of Miami Gordon Center is the developer of Advanced Stroke Life Support®, a hands-on, eight-hour curriculum for EMS personnel, nurses and physicians that satisfies Joint Commission educational requirements for stroke centers. ASLS® and its unique neurologic assessment tool, the MEND Exam, are ideal for pre-hospital and hospital use.

University of Florida Comprehensive Stroke Center 352

stroke.uflhealth.org
UF Health physicians and specialists are nationally renowned in the prevention, diagnosis and treatment of stroke. Our team includes highly-trained vascular neurologists and endovascular/cerebrovascular neurosurgeons who can care for people with all kinds of strokes, from simple to the most complex.

Vanderbilt University Medical Center 231

vanderbilt.edu/work-at-vanderbilt
We are committed to excellence in patient care, leadership in research and preeminence in medical education. Our culture thrives on challenges and champions innovation. VUMC is regularly ranked among the nation's elite hospitals in terms of quality and effectiveness. To learn more about working at Vanderbilt, visit www.vanderbilt.edu/work-at-vanderbilt.

VasSol Inc. 234

VasSol develops and markets the NOVA software for Quantitative Magnetic Resonance Angiography (qMRA®). Volumetric blood flow rates derived from the NOVA-Neuro application aid the assessment of ischemic stroke risk and provided the key diagnostic information for stroke prediction in the VERITAS study, JAMA Neurology, published online Dec. 21, 2015.

VisualSonics 316

visualsonics.com
FUJIFILM VisualSonics is the undisputed world leader in high-resolution, micro-ultrasound systems specifically designed for cardiovascular research. Echocardiographic images are up to 30 µm in resolution, five to 10 times higher than any other ultrasound system. Our platforms combine high-resolution, real-time in vivo imaging at a reasonable cost with ease-of-use and quantifiable results.

Wi-Fi Charging Lounge 359

Wolters Kluwer 318
Lippincott Williams & Wilkins, a Wolters Kluwer Health company, is a global provider of information, business intelligence and point-of-care solutions for the healthcare industry and a leading international publisher of medical books, journals and electronic media. We proudly offer specialized publications and software for physicians, nurses, students and clinicians.

World Stroke Organization 360

The World Stroke Organization (WSO) is the world's leading organization in the fight against stroke. Today, WSO has more than 2,000 individual members and more than 60 society members from 85 different countries.

Zoll Medical Corporation 615

zoll.com
ZOLL Medical Corporation, a leader in medical products and software solutions, offers Intravascular Temperature Management (IVTM™) solutions, which provide healthcare professionals with the power and control needed to rapidly, safely and more effectively manage the core body temperature of critically ill or surgical patients with warming and cooling applications.



INTERNATIONAL STROKE CONFERENCE 2016
Stroke Nursing Symposium: February 16
ISC Pre-Conference Symposia: February 16
International Stroke Conference: February 17-19
Los Angeles, California
strokeconference.org

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 - Pre-Conference Symposium I: Stroke in the Real World: To Infinity and Beyond: Endovascular Therapy and Systems of Care
 - Pre-Conference Symposium II: (Student/Trainee/Early Career): The Nuts and Bolts of Pre-clinical Behavioral Testing in Animals

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Studies look at timing of tPA following stroke

The window of time in which tPA must be administered for treating acute ischemic stroke has limited its use. One result of a new study of tPA in strokes of unknown duration could add infarct status as an indication for thrombolysis.

“We all have many patients in whom you would like to use tPA, but that time clock from the initial onset of symptoms is not clear,” said ISC Vice Program Chair Bruce Ovbiagele, MD, MSc, professor and chairman of neurology at the Medical University of South Carolina in Charleston. “MR WITNESS used MR imaging to screen for evidence of an early potentially tPA-eligible stroke, and then initiated tPA treatment in eligible patients. This particular study wanted to find out if combined imaging techniques—versus a single technique—would increase the sensitivity for identifying acute ischemic stroke patients in the early stages of stroke whose events were not witnessed, without affecting specificity.”

The initial results of “MR WITNESS: A Study of Intravenous Thrombolysis with Alteplase in MRI-Selected Patients” will be presented by Ona Wu, MD, during a Late-Breaking Science Oral Abstracts session at 1:30 p.m. Thursday in Room 408. Wu is an associate professor of radiology at Harvard Medical School and co-principal investigator for the trial at Massachusetts General Hospital.

This phase II open-label interventional study is designed to examine the safety of tPA in patients with unwitnessed stroke onset and MRI evidence of early ischemic stroke. Investigators

will also assess the effectiveness of thrombolysis in patients selected using MRI findings rather than time since the onset of symptoms.

Other presentations will expand the initial results of endovascular treatment trials presented in 2015.

“We can expect some very robust analyses of the endovascular studies that were presented last year,” said ISC Program Chair Kyra Becker, MD, professor of neurology and neurological surgery and co-director of the University of Washington Medicine Stroke Center in Seattle. “I am looking forward to the data regarding the effects of time-to-therapy on outcomes from endovascular treatment.”

Mayank Goyal, MD, professor and director of research in the Department of Diagnostic Imaging at the Hotchkiss Brain Institute at the University of Calgary, will present “Analysis of Individual Patient Data from MR CLEAN, ESCAPE, EXTEND-IA, SWIFT PRIME and REVASCAT.” The five randomized controlled trials examined different endovascular interventions and the effects of time to treatment on functional outcomes and mortality.

Theresa I. Shireman, PhD, professor of health services, policy and practices at Brown University in Providence, Rhode Island, will present a cost-effectiveness analysis of the SWIFT PRIME trial that combined the Solitaire thrombus retrieval device and tPA to treat acute ischemic stroke. Becker noted that the original trial was stopped early because of efficacy.

A second meta-analysis will be presented by Radoslav Raychev, MD, medical director of the Stroke and Neurointerventional Program at Saddleback Memorial Hospital and assistant clinical professor of neurological surgery at the University of California, Los Angeles. Raychev will present “Predictors of Intracranial Hemorrhage and Clinical Outcome After Stentriever Thrombectomy: Pooled Analysis from Swift Prime, Swift, and Star Trials.” ■

UPCOMING SESSION

Late-Breaking Science Oral Abstracts session

Thursday, 1:30-3 p.m.
Room 408

Presenters:

Ona Wu, MD
Mayank Goyal, MD
Theresa I. Shireman, PhD
Radoslav Raychev, MD

OUTSIDE THE BOX

continued from page 1

working together on a broad range of issues – including stroke in children, rehabilitation and recovery, neuropsychology and cognition – in a collaborative format championed by Adams. Weyhenmeyer held a similar role on a Bugher-ASA project featuring labs at California-Davis/San Francisco, Duke and Harvard.

Adams is the son of Nelson Adams, a lawyer who helped set up the Bugher Foundation in 1961. The foundation began working with the American Heart Association in the mid-1980s and a decade later Dan Adams joined his father as a trustee.

Dan Adams, whose career was in advertising and branding, helped champion the foundation’s focus on funding stroke research. He blended his professional expertise and his stroke knowledge to help the AHA/ASA develop branding and focus for stroke campaigns.

His sons Bryan and Bruce are Bugher Trustees, alongside Gayllis Ward, who served many years with Dan Adams.

The Bugher Foundation has funded over \$36 million in heart and stroke studies overseen by the American Heart Association/American Stroke Association, making the foundation among the AHA’s most generous research donors. ■

ISC 2017 and Nursing Symposium 2017 Call for Science dates

Session Ideas

Suggested session submitter opened:

Monday, Feb. 15, 2016

Suggested session submitter closes:

Tuesday, March 15, 2016

Abstracts

Submission opens:

Wednesday, May 25, 2016

Submission closes:

Tuesday, Aug. 16, 2016

Late-Breaking Science and Ongoing Clinical Trials Abstracts

Submission opens:

Wednesday, Oct. 12, 2016

Submission closes:

Wednesday, Nov. 6, 2016

The link to submit abstracts and/or session ideas can be found at strokeconference.org/submitscience on the applicable date above. Start planning now for the International Stroke Conference 2017, Feb. 22-24 in Houston.

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Visit our staff at Headquarters, Booth 235, in the Science & Technology Hall (open 10 a.m. to 4 p.m. Thursday) to learn more. ■

Claim your CME/CE credit

You have two ways to complete your conference evaluation and claim your CME/CE credits for the conference, pre-conference symposia and/or nursing symposium.

1. Stop by the Communication Center, which is in the South Hall Lobby, Level 1, of the

Los Angeles Convention Center.

2. Visit learn.heart.org from any computer with Internet connection.

CME/CE credit will not be available to claim for this activity after Aug. 19, 2016.

International attendees may obtain an attendance verification form at one of the self-service terminals in Registration, located in Hall J, Level 1.

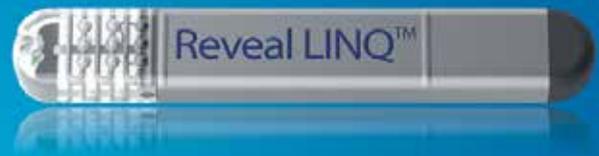
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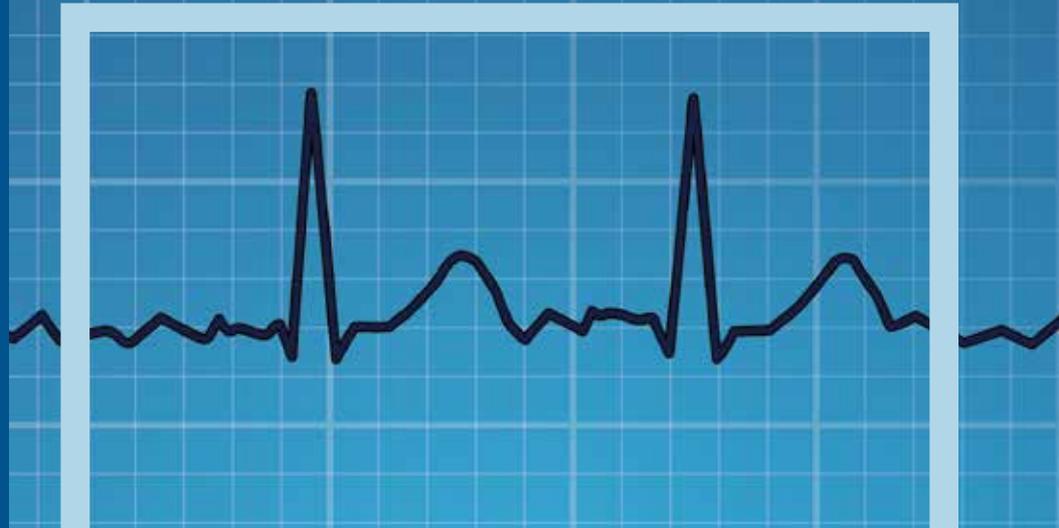
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Thursday, February 18
Expert Theater

12:10 pm—12:40 pm
Exhibit Hall Floor
Booth #445

This event is not part of the official International Stroke Conference 2016 as planned by the International Stroke Conference Program Committee.

PROGRAM FACULTY

Robert L. Felberg, MD

Professor of Neurology
Medical Director
Comprehensive Stroke Program
Overlook Medical Center
Summit, New Jersey

CRYPTOGENIC STROKE AND THE ROLE OF AF MONITORING



Reference

¹ Sanna T, Diener HC, Passman RS, et al. Cryptogenic stroke and underlying atrial fibrillation. *N Engl J Med*. June 26, 2014;370(26):2478-2486.

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